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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,246	04/16/2004	Hirokazu Miyazaki	8001-1049-1	5528

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YOUNG & THOMPSON
745 SOUTH 23RD STREET
2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

PAREKH, NITIN

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/825,246	Applicant(s) MIYAZAKI, HIROKAZU	
	Examiner Nitin Parekh	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10,11,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 11 and 16 are objected to because of the following informalities:
 - A. Claim 11, line 4: Delete "said connecting" and insert ---"connecting" ---.
 - B. At the end of claim 16, line 9: Insert --- "of holes" ---.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Grabbe (US Pat. 5173055- see IDS).

Regarding claim 16, Grabbe disclose a method of method of manufacturing an insulating film/sheet (see 26 between 48 and 42 in Fig. 2, 8 and 9) provided between a semiconductor device/chip and a printed circuit board (PCB)/wiring substrate (see 48 and 42 in Fig. 8 and 9) (WS) comprising:

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- providing a metal sheet/film (see 12 in Fig. 3) on one surface of the insulating film/sheet
- cutting the desired portions of the metal sheet/film to form a plurality of contact elements/leads (see 10 in Fig. 1 and 2; Col. 2, lines 31-33)
- cutting out predetermined places of the insulating film/sheet to provide a plurality of windows/holes through the insulating film/sheet (see 28 in Fig. 2; Col. 2, line 16), and
- adhesively fixing one/first end of each of the plurality of contact elements/leads onto the insulating film/sheet (see wide end 22 in Fig. 2-4; Col. 2, lines 21-30), and
- making second/other end of each of said plurality of contact elements/leads (see 18 in Fig. 4) extending/falling into a corresponding one of the windows/holes (Fig. 1-9; Col. 1, line 60- Col. 2, line 56; Col. 1-3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grabbe (US Pat. 5173055- see IDS) in view of DiStefano et al. (US Pat. 5518964-see IDS).

Regarding claim 15, Grabbe disclose a method of method of manufacturing an insulating film/sheet (see 26 between 48 and 42 in Fig. 2, 8 and 9) provided between a semiconductor device/chip and a printed circuit board (PCB)/wiring substrate (see 48 and 42 in Fig. 8 and 9) (WS) comprising:

- providing a metal sheet/film (see 12 in Fig. 3) on one surface of the insulating film/sheet
- cutting the desired portions of the metal sheet/film to form a plurality of contact elements/leads (see 10 in Fig. 1 and 2; Col. 2, lines 31-33)
- cutting out predetermined places of the insulating film/sheet to provide a plurality of windows/holes through the insulating film/sheet (see 28 in Fig. 2; Col. 2, line 16), and
- adhesively fixing one/first end of each of the plurality of contact elements/leads onto the insulating film/sheet (see wide end 22 in Fig, 2-4; Col. 2, lines 21-30), and
- making second/other end of each of said plurality of contact elements/leads (see 18 in Fig. 4) extending/falling into a corresponding one of the windows/holes

(Fig. 1-9; Col. 1, line 60- Col. 2, line 56; Col. 1-3).

Grabbe fails to teach using masking and etching the metal film to form the plurality of leads.

DiStefano et al. teach using conventional processes such as masking, patterning and etching to form terminal portions/leads on a metal/copper layer (see 40/44 on 36 in Fig. 2-4; Col. 7, line 15- Col. 8, line 52).

It would have been obvious to a person of ordinary skill in the art at the time invention was made to incorporate a method of masking and etching the metal film to form the plurality of leads as taught by DiStefano et al. so that the desired dimensional accuracy and alignment can be achieved in Grabbe's method.

Allowable Subject Matter

6. Claim 10 is allowed.
7. Claim 11 would be allowable if rewritten to overcome the above objection.

Reasons for Allowance

8. The following is an examiner's statement of reasons for allowance:

The references of record do not teach either singularly or in combination at least the limitations including steps "providing an insulating sheet having holes corresponding to said connection pads and having a plurality of leads, one end of each said leads being fixed on a first surface of said insulating sheet and the other end of each of said leads protruding from a second surface of said insulating sheet through one of said holes",

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"electrically connecting said other end of each of said leads of said insulating sheet to a corresponding one of said connection pads" and "electrically connecting each of said solder balls to said fixed one end of a corresponding one of said leads" in a manufacturing method for mounting a semiconductor chip on a wiring substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Parekh whose telephone number is 571-272-1663. The examiner can normally be reached on 09:00AM-05:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

NP

02-03-05


NITIN PAREKH

PRIMARY EXAMINER

TECHNOLOGY CENTER 2800